LTE ADVANCED SERVICE INDICATOR

CROSS-REFERENCE TO RELATED APPLICATIONS

[0001] This application claims priority from U.S. Provisional Application No. 61/870,947, filed on Aug. 28, 2013 and incorporated herein by reference in its entirety.

TECHNICAL FIELD

[0002] The teachings in accordance with the exemplary embodiments of this invention relate generally long term evolution (LTE) wireless networks and telecommunications. More specifically, the exemplary embodiments of the invention relates to an LTE Advanced service indicator and indicator triggering mechanisms.

BACKGROUND

[0003] This section is intended to provide a background or context to the invention that is recited in the claims. The description herein may include concepts that could be pursued, but are not necessarily ones that have been previously conceived or pursued. Therefore, unless otherwise indicated herein, what is described in this section is not prior art to the description and claims in this application and is not admitted to be prior art by inclusion in this section.

[0004] Certain abbreviations that may be found in the description and/or in the Figures are herewith defined as follows:

[0005] BCH broadcast channel

[0006] CA carrier aggregation

[0007] CSI channel state information

[0008] CQI channel quality indicator

[0009] GSM global system for mobile communications

[0010] HetNet heterogeneous networks

[0011] HSDPA high speed downlink packet access

[0012] HSDPA high speed uplink packet access

[0013] HSPA high speed packet access

[0014] eICIC non-CA based inter-cell interference coordination

[0015] LTE long term evolution

[0016] MDT minimization of drive test

[0017] MIMO multiple input multiple output

[0018] RSRP reference signal received power

[0019] RSRQ reference signal received quality

[0020] SON self-organizing networks

[0021] TM transmission mode

[0022] UMTS universal mobile telecommunications system

[0023] LTE, an acronym of long-term evolution, is marketed as 4G LTE. LTE is a standard for wireless communication of high-speed data for mobile phones and data terminals which is based on the GSM/EDGE and UMTS/HSPA network technologies. LTE provides core network improvements for an increased capacity and speed.

SUMMARY

[0024] In an exemplary aspect of the invention, there is a method comprising: receiving, with a device of a communication network, an indication of advanced services of an area associated with the communication network; in response to the indication of advanced services, determining a relative performance improvement of the advanced services for the device; and based on the determined relative performance improvement, setting an indication flag at the device.

[0025] In an exemplary aspect of the invention, there is an apparatus comprising: at least one processor; and at least one memory including computer program code, where the at least one memory and the computer program code are configured, with the at least one processor, to cause the apparatus to at least: receive an indication of advanced services of an area associated with the communication network; in response to the indication of advanced services, determine a relative performance improvement of the advanced services for the device; and based on the determined relative performance improvement, set an indication flag at the device.

[0026] In another exemplary aspect of the invention, there is a method comprising: sending by a network device towards a user equipment information including an indication of an advanced service area available to the user equipment, where the information is for use by the user equipment in determining whether accessing the advanced service area would provide a relative operational performance to the user equipment; and in response to the sending, receiving an indication of one of the user equipment displaying an indication of the advanced service area, and the user equipment accessing the advanced service area.

[0027] In another exemplary aspect of the invention, there is an apparatus comprising: at least one processor; and at least one memory including computer program code, where the at least one memory and the computer program code are configured, with the at least one processor, to cause the apparatus to at least: send towards a user equipment information including an indication of an advanced service area available to the user equipment, where the information is for use by the user equipment in determining whether accessing the advanced service area would provide a relative operational performance to the user equipment; and in response to the sending, receive an indication of one of the user equipment displaying an indication of the advanced service area, and the user equipment accessing the advanced service area.

BRIEF DESCRIPTION OF THE DRAWINGS

[0028] The foregoing and other aspects of embodiments of this invention are made more evident in the following Detailed Description, when read in conjunction with the attached Drawing Figures, wherein:

[0029] FIG. **1** is a simplified block diagram of various devices suitable for use in practicing the exemplary embodiments of the invention;

[0030] FIG. **2** illustrates a communication flow chart of a method in accordance with the exemplary embodiments of the invention;

[0031] FIG. **3** illustrates a feature of a user equipment autonomously evaluating a validity and/or basis for an LTE-Advanced service indication information in accordance with the exemplary embodiments of the invention; and

[0032] FIGS. **4**A and **4**B each illustrate a block diagram showing a method in accordance with the exemplary embodiments of the invention.

DETAILED DESCRIPTION

[0033] It has been considered to enable a mobile device such as a user equipment (UE) to indicate on a display whether a particular cell supports "LTE-Advanced" This type of indicator could be seen to indicate whether a cell supports